AMENDMENTS TO THE SPECIFICATION

The specification is changed as follows:

Page 7, lines 11-18:

A1 concl

The embodiments of the present invention are explained below with reference to the drawings. Although, hereinafter, explanations are provided for one or both of (photographic) density and brightness as examples of the aforementioned at least one kind of information belonging to each position of an image, it will be understood that the following explanations are also applicable for other ~~kind~~ kinds of information belonging to each position of the image.

Page 17, line 9 to page 19, line 11:

A2 cont'd

The sample 70 is held on the sample holder ~~70~~20. For example, in this embodiment, an organic material is distributed in the sample 70, and the organic material is labeled by a fluorescent dye. The fluorescent dye emits fluorescent light when exposed to excitation light. The light sources 30 emit the excitation light to be applied to the sample 70. The excitation light cutoff filter 40 cuts off the excitation light scattered by the sample 70, and passes only the fluorescent light emitted from the sample 70. The lens 12 condenses the fluorescent light emitted from the sample 70, and forms an image of the fluorescent light on an imaging surface (a light-receiving surface of the charge-coupled device (CCD) 11). The image formed by the lens 12 is affected by the distortion aberration of the lens 12, i.e., the formed image is distorted. The charge-coupled device (CCD) 11 has a plurality of solid-state imaging elements arrayed in a plane. The solid-state imaging elements correspond to a plurality of pixels, and have their light-receiving surfaces in the imaging surface. Signals representing the above image of the fluorescent light are generated by the charge-coupled device (CCD) 11, and are transferred to the

first frame memory 50. The first frame memory 50 has a plurality of storage areas corresponding to the plurality of pixels, receives the above signals representing the image of the fluorescent light from the charge-coupled device (CCD) 11, and stores therein the image information for one frame. The memory 61 stores the distortion aberration characteristic of the lens 12, for example, as illustrated in Fig. 1. The second frame memory 64 is provided for storing information on a distortion-corrected image from which distortions due to the distortion aberration of the lens 11 are eliminated, and has areas for storing image information for each pixel of the distortion-corrected image. The image position correction unit 62 first performs calculation to obtain a position (the aforementioned position of the coordinates (x', y')) in the first frame memory 50 corresponding to (an address for) each pixel of the distortion-corrected image, based on the distortion aberration characteristic stored in the memory 61 by using the equations (1) and (2). The brightness correction unit 63 performs calculation to obtain a brightness D' of the above position in the first frame memory 50 obtained by the position correction unit 62, based on brightness values Dl' , D2' , D3' , and D4' of four nearest pixels (respectively having coordinates (ul, vl), (u2, v2), (u3, v3), and (u4, v4)) in the image stored in the first frame memory 50 around the above position calculated by the position correction unit 62, by using interpolation. Then, the brightness correction unit 63 further performs the calculation of the equation (3) to obtain a further corrected brightness value D corresponding to each pixel of the image to be stored in the second frame memory 64. Thus, the corrected brightness values D for all of the pixels of the distortion-corrected image are stored in the second frame memory 64. If a very accurate correction of the brightness values is not required, the correction by the equation (3) may not be performed.

A2 cont.